

Title: Prediction Based Optimization of a Semiconductor Supply Chain Using an Adaptive Real Time Work-in-Progress Tracking System Atts: Michael E. Orshansky and Klaus ten Hagen No.: 22272-06093

Phase	Vendor	Estimated Time (Days)
Order Processing	ASIC Provider	3
GDSII Preparation	ASIC Provider	19
Fabrication	Fab	19
Probe Card Making	Test/Assembly House	56
Package Design	Test/Assembly House	99
Wafer Transfer	Freight Forwarder	1
Packaging	Test/Assembly House	3
Parts Transfer	Freight Forwarder	<b>,</b> -
Test & Debug	ASIC Provider	5
Parts Transfer	Freight Forwarder	1
TOTAL		94

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o.: 22272-06093

ГПАУС	Vendor	Estimated Time(Days)
Order Processing	Fabless ASIC Provider	2
Fabrication	Foundry	89
Wafer Transfer	Freight Forwarder	1
Package/Test	Test/Assembly House	15
Parts Transfer	Freight Forwarder	1
TOTAL		06

Step No.	Step Name	Step Group
1	WAF-1	Wafer Start
6	TRCH1-CMP	Wafer Start
11	SAC1-OX	Wafer Start
25	PO1-DP	Gate Mask
27	PO1-ET	Gate Mask
63	ME1-PH	Metal 1
64	ME1-ET	Metal 1
92	VA2-CMP	Metal 3
. 92	VA2-CMP	Metal 3
117	PA1-PH	Metal 6
120	WAT 2-1	WAT
121	SORT	SORT

FIG. 20

	Customer Order 1	Customer Order 2
Time Stamp	12:20 am, 06/20/01	12:20 am, 06/20/01
Foundry ID	5910	5920
Lot 1D	5910-1	5920-2
Current Step	WAF1-START	WAF1-START
Current Quantity	25	25
:	•	•

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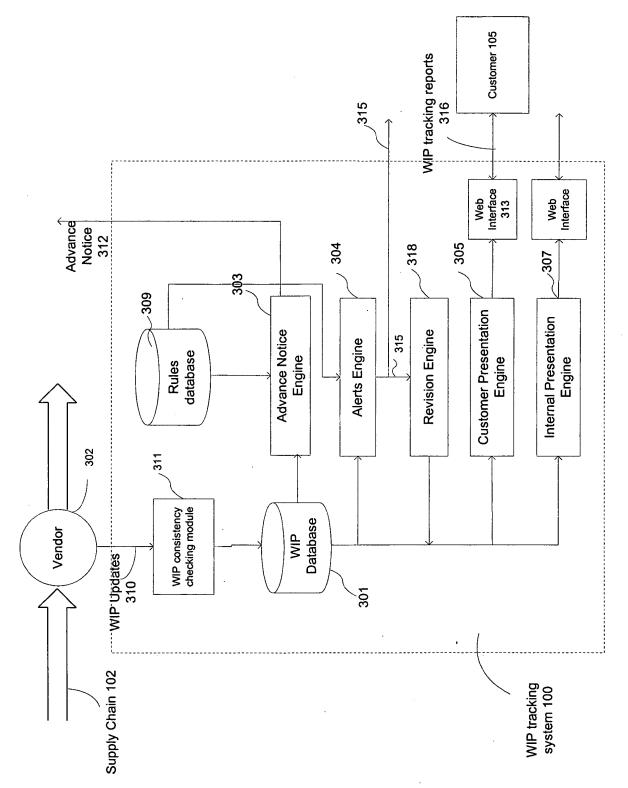
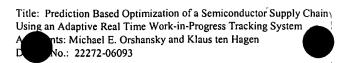


FIG. 3



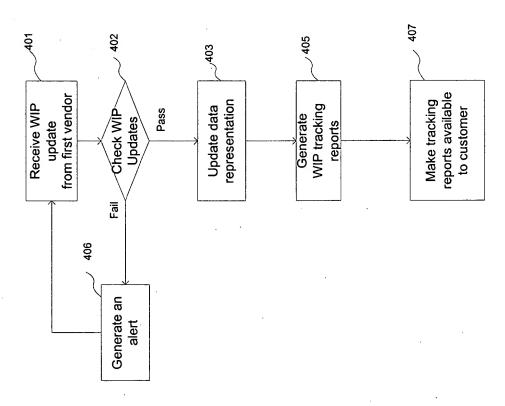
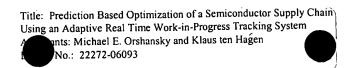


FIG. 1



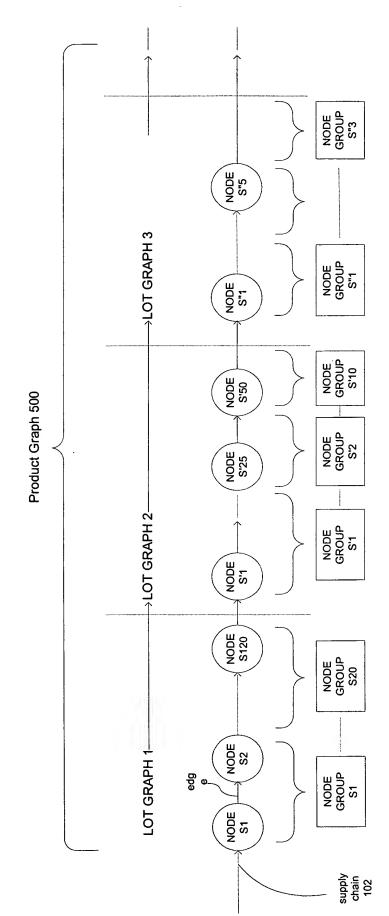
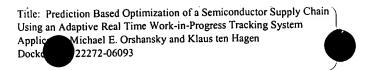


FIG. 5



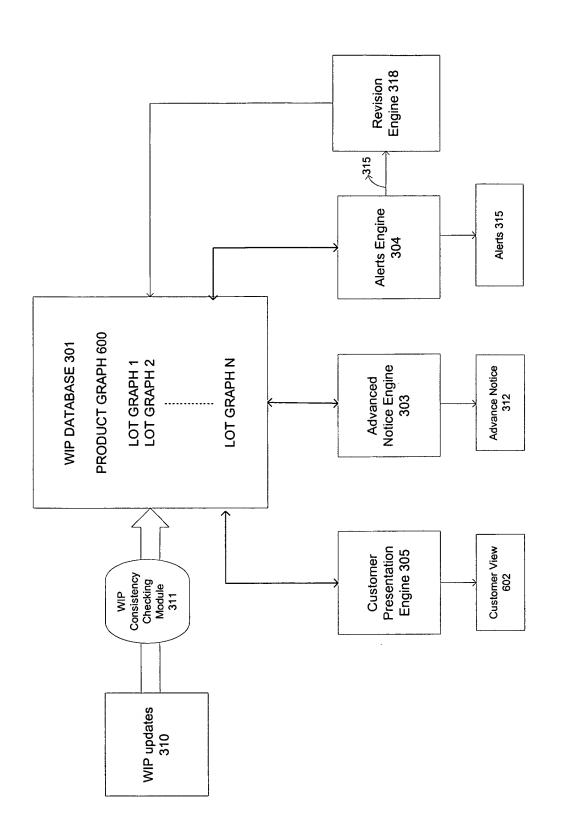


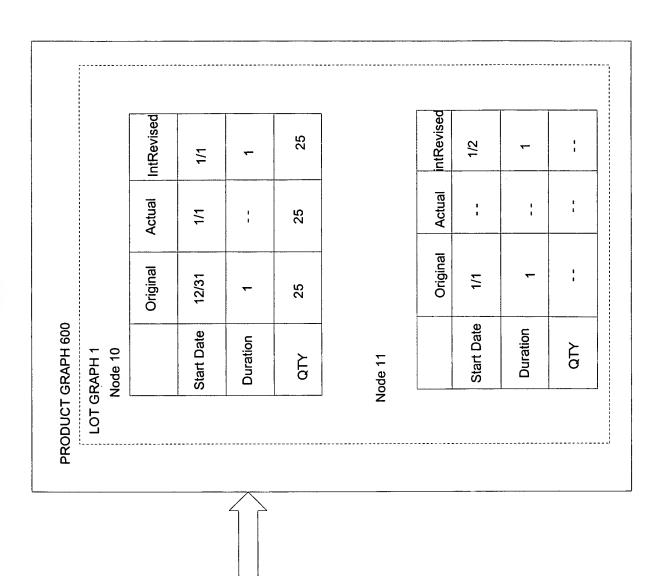
FIG. 6

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Dockd 22272-06093

			LOTG	LOT GRAPH 1 Node 10			
					Original	Actual	intRevised
				Start Date	12/31	1	12/31
				Duration	~		-
				ΔΤΥ		1	
		,		Node 11			
Process Flow 709 for Lot ID 702					Original	Actual	intRevised
pected	Expected Conversion Duration			Start Date	1/1	ı	1/1
-	200			Duration	-	l	-
-	200			YTØ	ı	1	1

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Title: Prediction Based Optimization of a Semiconductor Supply Chain Using an Adaptive Real Time Work-in-Progress Tracking System April 1985 Ap



O T

Step

Date

WIP Update 310A for Lot ID 702 25

9

1,1

FIG. 7

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Start Date Duration QTY Node 11 Start Date Duration	Original 12/31 25 25 1/1	Actual Actual 1/6	intRevised  1  25  1/6  1/6
ΔΤΥ	25	24	24

Ω

Step

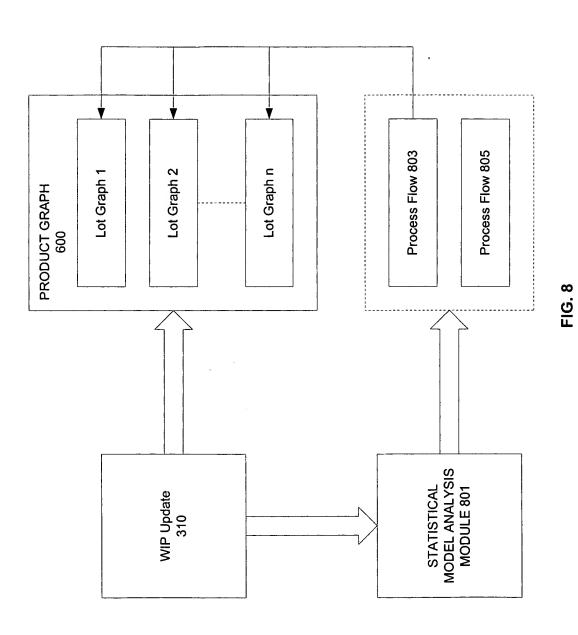
Date

WIP Update 310B for Lot ID 702 24

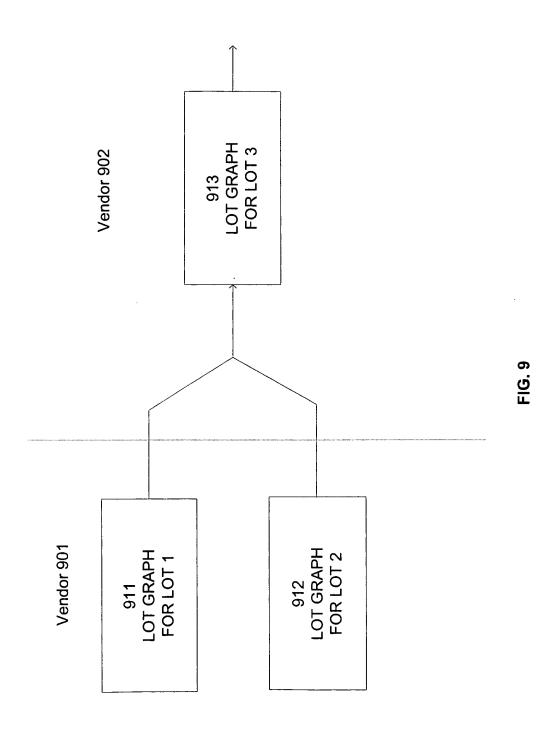
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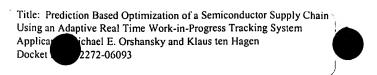
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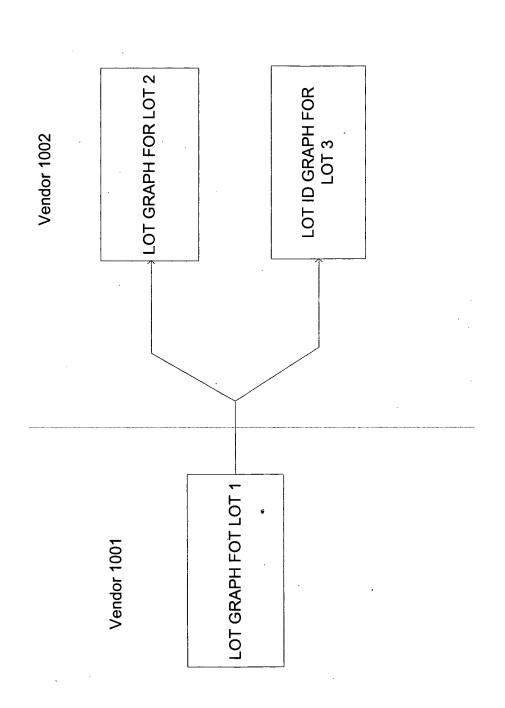
:IG. 7

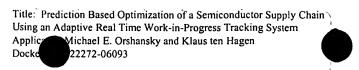


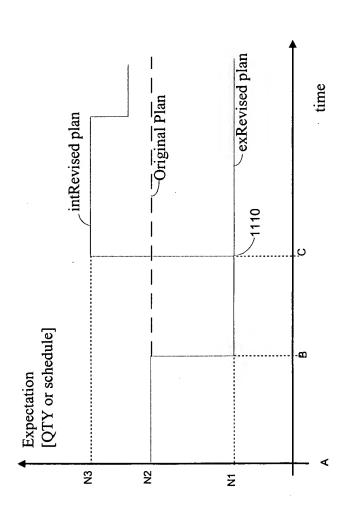
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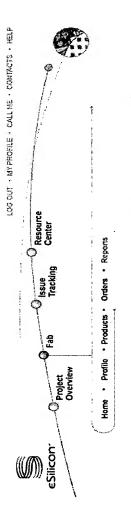




**-1**G. 11

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DELMERY SCHEDLLE + OPOCR STATUS + 459 + LOTS-ON-HOLD + DELMERY + DELIVERY PERFORMANCE + SHISHENT HISTORY

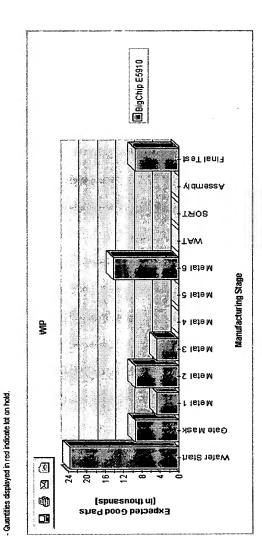
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**Work In Progress** 

Customer Part#

BC-E5910

All quartities are in "Parts"



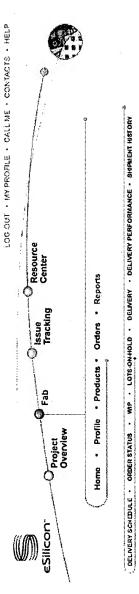
Report Last Updated: Thu Jul 19 19:58:57 PDT 2001

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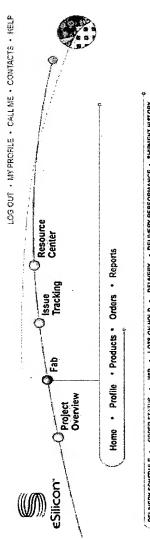
June         June <th< th=""><th>Delivery Schedule</th><th>Produ</th><th>Product   BigChip E5910 🔄 Period   Month 🔄</th><th>Period Month</th><th>Download as CSV P</th></th<>	Delivery Schedule	Produ	Product   BigChip E5910 🔄 Period   Month 🔄	Period Month	Download as CSV P
5,000         23,000         36,000           4,000         22,000         37,000           9,500         18,685         28,600           9,500         28,185         56,685	And the Control		kluv	August	September
4,000 22,000 37,000 9,600 18,685 28,600 9,500 28,185 50,689	Requested	5,000	23,000	36,000	38,000
9,500 18,685 28,500 9,500 28,185 50,688	Committed	4,000	22,000	37.000	37,000
9,500 28,185 56,885	Shipped/Projected	009'8	18,685	28,500	38.000
	Running Total	9,500	28,185	589,05	94,685

		Requested Committed	Shipped/Projected			
E5910					Aug Sep	
Delivery Schedule for BigChip E5910					וטנ	Months
40 /	30	housands]		10	o nul	

Report Last Updated : Thu Jul 19 11:00:47 PDT 2001

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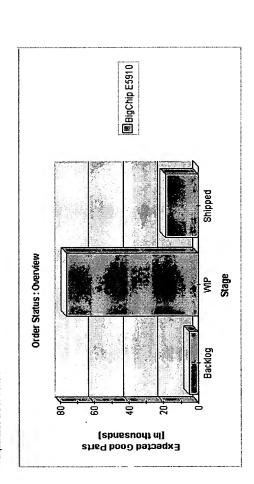


DELIVERY SCHIDULE . ORDER STATUS . WIP . LOTS ON HOLD . DELIVERY . DELIVERY PERFORMANCE . SHAMENT HISTORY

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## Order Status Report

BC-E5910	BC-E5910 BigChip E5910 E5910 100,000 5,190 78,000 19,910	E5910	100,000	5,190	76,000	18,810



Report Last Updated: Thu Jul 19 11:01:45 PDT 2001

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FIG. 12C